

**Amendments to the Claims:**

This listing of claims will replace all prior listings of claims in the application:

**Listing of Claims:**

1. (currently amended) A method of screening *in vitro* for modulators of RDGC GPCR phosphatase activity, the method comprising the steps of:
  - (i) providing a first sample comprising a rhodopsin G protein coupled receptor and a ~~heterologous~~ Drosophila RDGC phosphatase comprising the sequence set forth in SEQ ID NO:1;
  - (ii) contacting the first sample with a test compound suspected of having the ability to modulate RDGC GPCR phosphatase activity;
  - (iii) providing a second sample comprising a ~~mutant rhodopsin lacking the last 18 amino acids at the cytoplasmic terminus as compared to wild-type the rhodopsin G protein coupled receptor~~ and a mutant Drosophila RDGC phosphatase ~~comprising the sequence set forth in SEQ ID NO:1;~~
  - (iv) contacting the second sample with the test compound suspected of having the ability to modulate RDGC GPCR phosphatase activity;
  - (v) detecting Drosophila RDGC GPCR phosphatase activity in the first sample and in the second sample; and
  - (vi) comparing the level of Drosophila RDGC GPCR phosphatase activity in the first sample and the second sample, thereby detecting RDGC GPCR phosphatase activity; thereby detecting modulators of RDGC GPCR phosphatase activity;  
wherein the test compound is a RDGC mimetic.
- 2-4. (cancelled)
5. (currently amended) The method of claim 1, wherein the rhodopsin is heterologous recombinant.

6. (previously presented) The method of claim 1, wherein the step of detecting comprises a G-protein coupled receptor phosphorylation assay.

7. (previously presented) The method of claim 1, wherein the step of detecting comprises a G-protein coupled receptor mobility assay.

8. (previously presented) The method of claim 1, wherein the step of detecting comprises a G-protein coupled receptor signal transduction assay.

9. (currently amended) The method of claim 1, wherein ~~the sample~~ comprises the first sample and the second sample comprise a cell.

10. (previously presented) The method of claim 9, wherein the cell is selected from the group consisting of a eukaryotic cell, an insect cell, a mammalian cell.

11. <sup>3</sup> (previously presented) The method of claim 10, wherein the cell is selected from the group consisting of a Drosophila cell or a human cell.

12. (currently amended) The method of claim 1, wherein ~~the sample~~ comprises the first sample and the second sample comprise a membrane comprising a G-protein coupled receptor.

13. (currently amended) The method of claim 1, wherein ~~the sample~~ comprises the first sample and the second sample comprise an aqueous sample or a solid-phase sample.

14. (cancelled)

15. (currently amended) A method of screening a cell for modulators of RDGC GPCR phosphatase activity, the method comprising the steps of:

(i) providing a first sample cell comprising rhodopsin and a ~~heterologous~~ Drosophila RDGC phosphatase comprising the sequence set forth in SEQ ID NO:1;

(ii) contacting the first sample cell with a test compound suspected of having the ability to modulate RDGC GPCR phosphatase activity;

(iii) providing a second sample cell comprising a ~~mutant rhodopsin lacking the last 18 amino acids at the cytoplasmic terminus as compared to wild type~~ the rhodopsin and a mutant Drosophila RDGC phosphatase ~~comprising the sequence set forth in SEQ ID NO:1;~~

(iv) contacting the second sample cell with the test compound suspected of having the ability to modulate RDGC GPCR phosphatase activity;

(v) detecting Drosophila RDGC GPCR phosphatase activity in the first cell and in the second sample cell; and

(vi) comparing the level of Drosophila RDGC GPCR phosphatase activity in the first sample cell and the second sample cell, thereby detecting RDGC GPCR phosphatase activity; thereby detecting modulators of RDGC GPCR phosphatase activity;

wherein the test compound is a RDGC mimetic.

16. (cancelled)

17. (currently amended) The method of claim 15, wherein the rhodopsin is heterologous recombinant.

18. (cancelled)

19. (currently amended) The method of claim 15, wherein ~~the cell is~~ the first cell and the second cell are selected from the group consisting of a eukaryotic cell, a mammalian cell, an insect cell.

20. (currently amended) The method of claim 19, wherein ~~the cell is~~ the first cell and the second cell are selected from the group consisting of a Drosophila cell or a human cell.

21. (cancelled)

22. (currently amended) The method of claim 15, wherein ~~the sample~~  
~~comprises the first cell and the second cell~~ comprise an aqueous sample or a solid-phase sample.

23-38. (cancelled)